

Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

Journal of Wind Engineering & Industrial Aerodynamics

journal homepage: www.elsevier.com/locate/jweia

In Memoriam: Professor Giovanni Solari (1953–2020): former president, colleague, friend



Professor Giovanni Solari

“Scientists study the world as it is, Engineers create the world that has never been”.¹ On November 19, 2020, the International Association of Wind Engineering (IAWE) and the World lost one of the most prominent leaders and role models in the fields of Wind and Structural Engineering: Professor Giovanni Solari. The editor and associate editor of the Journal of Wind Engineering and Industrial Aerodynamics (JWEIA), the official journal of the IAWE, pay tribute to professor Giovanni Solari in this manuscript in terms of a short *In Memoriam*.

1. How we first met him

“*Quam bene vivas referre, non quam diu.*”²

Bert Blocken, a young and inexperienced PhD student at the time, had the privilege of meeting Professor Solari for the first time at the First International Symposium on Wind and Structures for the 21st Century, held during 26–28 January 2000 on Jeju Island, South-Korea. This conference was atypical in that with less than 100 participants it did not have

a high attendance but nearly all leaders and major professors in the field of Wind Engineering were present. This provided ample opportunity for the few young PhD students at this conference, including yours truly, to interact with these leaders, such as Professor Solari. This opportunity culminated immediately after the conference on January 29, 2000, when I noticed that the only person on the 4 a.m. shuttle bus leaving on the long trip from the Jeju Island hotel to the airport, was Professor Solari. With careful audacity I took place on the row of seats opposite of the aisle to his row. He was clearly very tired and while others might have ignored the presence of this young and unimportant PhD student in the otherwise empty bus, he immediately greeted me and we had a great conversation. I never expected that he would show so much interest in this young and inexperienced person that he only met once and maybe would never meet again. Little did both of us know at that time that later we would become close collaborators and even friends.

Ted Stathopoulos, who was also in this Jeju conference had the pleasure and privilege to first meet Professor Solari much earlier, at the Sixth International Conference on Wind Engineering, held in Gold Coast, Australia, on March 21–25, 1983. Arriving from different parts of the Earth after a very long trip we met at the registration desk and we started discussing the details of our conference presentations. Being a junior academic myself, I was intrigued by talking to a very noble colleague with excellent ideas and rigor in his research. This was the beginning of a strong friendship with Professor Solari, who would become an outstanding contributor to the Journal of Wind Engineering and Industrial Aerodynamics, both as an author and a reviewer. The words of St. Justin that *life is indeed the introduction of the book of eternity* come to mind, as I write these few lines about Giovanni Solari.

2. Expertise

“*The root of the matter is that the greatest stimulus of scientific discovery are its practical applications.*”³

Giovanni Solari obtained his Master Degree in Civil Engineering from the University of Genova in 1977 with a thesis on “Dynamic along-wind response of slender structures” with *Magna Cum Laude* (110/110). In 1983, he was appointed Assistant Professor of Structural Mechanics and Engineering at the University of Genova. In 1988, he was appointed Associate Professor. In 1990, he was appointed as Full Professor of

¹ Theodore von Karman (1881–1963), Hungarian-American mathematician, engineer and physicist, primarily active in aeronautics and astronautics.

² “It is how nobly you live that matters, not how long.” Source: *Epistulae morales ad Lucilium* CI (101). Lucius Annaeus Seneca, alias Seneca the Younger (c. 4 BC – 65), Roman Stoic philosopher, statesman, dramatist.

³ Lewis Fry Richardson (1881–1953), English mathematician, meteorologist, physicist and pacifist.

Structural Mechanics at the Università della Calabria – Arcavacata di Rende (Cosenza), to return in 1991 to the University of Genova as Full Professor of Structural Engineering. His main areas of expertise were the wind-excited and aeroelastic response of structures, probability theory, random processes and reliability analysis in Structural Engineering, Wind Engineering and Earthquake Engineering. As a true representative of the highly respected and renowned traditional Italian Engineering Education system, he embodied the philosophy of thorough and extensive knowledge of mathematics and physics together with a large drive towards high-quality and successful solutions to practical problems in engineering. This philosophy has guided both his scientific research and his own academic lecturing for decades. In recent years, he led several major research projects on the safety management of port areas during hazardous wind events (e.g. Solari et al., 2012; 2015; Burlando et al., 2014; De Gaetano et al., 2014), which laid the seeds for his subsequent successful application to the European Research Council for a project on thunderstorm downbursts.

3. Excellence

“Gloria virtutem tanquam umbra sequitur.”⁴

Professor Solari has displayed scientific excellence in his areas of expertise and exceptional leadership in the fields of Wind and Structural Engineering. He received world-wide recognition for this in the form of a long list of the most prestigious awards in the fields of Wind and Structural Engineering. In 2006, he received the Jack E. Cermak Medal 2006 from the American Society of Civil Engineers (ASCE). In 2011, he was awarded the Alan G. Davenport Medal by the IAWA. In 2013, he obtained the Otto H.G. Flachsbart Medal from the Windtechnologische Gesellschaft e.V. of Germany, Austria and Switzerland. From 2014 on, he held the title of Fellow of the Engineering Mechanics Institute of the ASCE. In 2014, he also obtained the Raymond C. Reese Research Prize from the ASCE. In 2016, he received the distinction of Honorary Doctor Honoris Causa from the Technical University of Civil Engineering of Bucharest in Romania. In 2017, he was awarded the Robert H. Scanlan Medal by the Engineering Mechanics Institute of the ASCE. These awards were bestowed upon him based on the exceptional way in which he has combined scientific excellence in his fields of expertise with outstanding service to the community.

4. Service to the community

“Omne quod movetur ab alio movetur.”⁵

Professor Solari has served the international Wind Engineering community in many ways. In this section, we focus on his role in the development of the International Association of Wind Engineering (IAWE). As described by Solari (2007) in an extensive and excellent overview paper, the IAWA was born in 1975, at the 4th International Conference on Wind Engineering (ICWE), London, UK, in a pioneering stage of Wind Engineering. It operated mostly informally in the period between 1975 and 1999. At the 10th ICWE in Copenhagen, Denmark, the IAWA Steering Committee Meeting decided to open a wide debate on rendering the IAWA coherent with the rapid development in the field of Wind Engineering. In 2003, the Steering Committee accepted newly compiled IAWA by-laws as well as a renewed organization. As Solari (2007) expressed it:

“an Executive Board was constituted to drive the Association and its activities between two subsequent ICWEs; a Secretariat was established to administer the IAWA and to represent a reference point for the wind engineering community; several associations and societies were accepted into IAWA membership, and a wide network of links and cooperations was created among member organisations, supporting members and other individual contacts spread to all parts of the world; the official IAWA web site — www.iawe.org — was created; renewed liaisons were made operative with international organisations working in wind engineering and similar fields; IAWA Awards were instituted in the broad field of wind engineering; a better sequence of dates and venues of the most important wind engineering conferences was planned.”

In this renewed organization, Professor Solari took upon him the leading and demanding role as first President of the IAWA, a function he held from 2003 until 2007. In this capacity, he invested enormous amounts of his time in traveling around the World and visiting and supporting IAWA member organizations and other individual contacts. He tirelessly continued to refine the by-laws and gathering feedback to make the IAWA as well-organized and successful as possible. Under his Presidency, the IAWA grew and flourished to become a highly reputed and respected international organization covering an immense range of activities in the field of Wind Engineering around the World. The work of Professor Solari was successfully continued under the President-ships of Professor Yukio Tamura and Professor Ahsan Kareem, making the IAWA the well-established top organization that it is today.

5. First ERC grant in wind engineering

“Ire fortiter quo nemo ante iit.”⁶

In view of Professor Solari’s excellence in his areas of expertise, it is not surprising that he became the first ever member of the Wind Engineering community to receive a grant from the European Research Council (ERC). Even more, he actually obtained the ERC’s most important and most prestigious grant: the ERC Advanced Grant. Professor Solari’s success in this highly competitive funding scheme opposed the often-expressed view in our field of Wind Engineering – and even the field of Civil Engineering as a whole – that ERC Grants would be exclusively awarded to scientists focusing on fundamental research rather than to engineers focusing on more applied research.

Professor Solari’s ERC project carries the full title of “Detection, simulation, modelling and loading of thunderstorm outflows to design wind-safer and cost-efficient structures” (Solari 2019; Solari et al., 2020). The masterfully chosen acronym is “THUNDERR”, where the first seven letters refer to the topic being studied while the latter “R” is intended to represent the scientific “roar” that should emerge from the project results. The project started on September 1, 2017 and will end on August 31, 2022. The project is currently led by Prof. Solari’s excellent research group at the University of Genova consisting of six outstanding colleagues: Prof. Giuseppe Piccardo, Prof. Maria Pia Repetto, Prof. Massimiliano Burlando, Prof. Luisa Carlotta Pagnini, Prof. Federica Tubino and Mr. Andrea Freda. The project employs one postdoc researcher and 7 PhD students. The project also includes an International Advisory Board (IAB) consisting of several of Solari’s international colleagues and friends: Prof. Horia Hangan (University of Western Ontario, Canada), Prof. Ahsan Kareem (University of Notre Dame, USA), Prof. Ted Stathopoulos (Concordia University, Canada), Prof. Yukio Tamura (Chongqing University, China), Prof. Uwe Ulbrich (Freie Universität Berlin, Germany) and Prof. Bert Blocken (Eindhoven University of Technology, the Netherlands and KU Leuven, Belgium). We are very grateful to Professor Solari for his invitation to be members of this IAB allowing us to work closely with him in his last scientific project. All people involved in the project have

⁴ “Glory is the attendant of virtue.” Source: Tusculanarum Disputationum, I. 45. Marcus Tullius Cicero (106 BC – 43 BC), Roman philosopher, politician, lawyer, orator, political theorist, consul and constitutionalist.

⁵ “Everything in motion is put and kept in motion by another.” Source: Aristoteles (384–322 BE), Greek philosopher and polymath; and Tommaso d’Aquino (1225–1274), Italian Dominican friar, philosopher, Catholic priest and Doctor of the Church.

⁶ “To boldly go where no one has gone before.”

confirmed that they will stay dedicated to THUNDERR and commit to bringing it to successful completion as a token of respect and appreciation to Professor Giovanni Solari.

6. Strong legacy

“Ὁ βίος βραχύς, ἡ δὲ τέχνη μακρά.”⁷

The scientific, educational and organizational legacy of Professor Giovanni Solari cannot be overestimated. His scientific achievements with hundreds of peer-reviewed journal and conference publications and numerous pioneering projects in Wind Engineering including some of his last projects “Wind and Ports”, “Wind, Ports and Sea” and “THUNDERR” will remain benchmarks of scientific excellence and societal impact for future generations of wind engineers, probably as long as this World will exist. Professor Giovanni Solari has always cherished university teaching. We could not find better words to describe his love for teaching than those expressed by himself in his recent overview paper “Education and dissemination in wind science and engineering” (Solari 2020):

“Writing a paper on education in wind science and engineering is a daunting task even for an author who has dedicated his entire life to this discipline, and has always given priority to the dissemination of knowledge towards the young generation, perceiving the academic role and the possibility to live among students motivated and eager to learn as a rare privilege. Certainly, the author considers this task much more difficult than discussing the state of the art of a familiar topic, or even more than presenting the results and prospects of a project to which the author himself and his research group are continuously working.”

The quality of Giovanni Solari’s teaching lives on in the numerous young Wind Engineers that he trained, many of which are now occupying leading positions in industry or academia, not least the excellent academicians that are currently active in his research group at the University of Genova. Also on the organizational side, the value of his legacy cannot be overstated and is represented by the monotonic increase in the reputation and success of the IAWE and its members.

7. Universal gratitude

*“Cum omnibus virtutibus me adfectum esse cupio, tum nihil est quod malim quam me et esse gratum et videri. Haec enim est una virtus non solum maxima sed etiam mater virtutum omnium reliquarum”*⁸

Maybe, all possible virtues considered, this is one of the most

important things that constitutes a great person like Professor Giovanni Solari: someone who genuinely and consistently finds and feels that what others do for him/her, is more meaningful than what he/she is doing for others. In line with the quote in section 3: “*Non id quod magnum est pulchrum est, sed id quod pulchrum magnum.*”⁹

“Vale Giovanni, amicitiae nostrae memoriam spero sempiternam fore.”¹⁰

References

- Burlando, M., Pizzo, M., Repetto, M.P., Solari, G., De Gaetano, P., Tizzi, M., 2014. Short-term wind forecast for the safety management of complex areas during hazardous wind events. *J. Wind Eng. Ind. Aerod.* 135, 170–181. <https://doi.org/10.1016/j.jweia.2014.07.006>.
- De Gaetano, P., Repetto, M.P., Repetto, T., Solari, G., 2014. Separation and classification of extreme wind events from anemometric records. *J. Wind Eng. Ind. Aerod.* 126, 132–143. <https://doi.org/10.1016/j.jweia.2014.01.006>.
- Solari, G., 2007. The international association for wind engineering (IAWE): progress and prospects. *J. Wind Eng. Ind. Aerod.* 95 (9–11), 813–842. <https://doi.org/10.1016/j.jweia.2007.01.010>.
- Solari, G., Repetto, M.P., Burlando, M., De Gaetano, P., Pizzo, M., Tizzi, M., Parodi, M., 2012. The wind forecast for safety management of port areas. *J. Wind Eng. Ind. Aerod.* 104–106, 266–277. <https://doi.org/10.1016/j.jweia.2012.03.029>.
- Solari, G., De Gaetano, P., Repetto, M.P., 2015. Thunderstorm response spectrum: fundamentals and case study. *J. Wind Eng. Ind. Aerod.* 143, 62–77. <https://doi.org/10.1016/j.jweia.2015.04.009>.
- Solari, G., 2019. Website of the THUNDERR Project. <http://www.thunderr.eu>. retrieved on 21/12/2020.
- Solari, G., Burlando, M., Repetto, M.P., 2020. Detection, simulation, modelling and loading of thunderstorm outflows to design wind-safer and cost-efficient structures. *J. Wind Eng. Ind. Aerod.* 203, 104142. <https://doi.org/10.1016/j.jweia.2020.104142>.
- Solari, G., 2020. Education and dissemination in wind science and Engineering. *J. Wind Eng. Ind. Aerod.* 203, 104241. <https://doi.org/10.1016/j.jweia.2020.104241>.

B. Blocken*

Building Physics and Services, Department of the Built Environment, Eindhoven University of Technology, P.O. box 513, 5600 MB, Eindhoven, the Netherlands
Building Physics and Sustainable Design, Department of Civil Engineering, KU Leuven, Kasteelpark Arenberg 40 - bus 2447, 3001, Leuven, Belgium

T. Stathopoulos

Department of Building, Civil and Environmental Engineering, Concordia University, 1515, St. Catherine Boulevard West, Montreal, Canada

* Corresponding author.

E-mail address: b.j.e.blocken@tue.nl (B. Blocken).

⁷ “Art is long, life is short”. Source: Aphorisms sect. 1, para. 1. Hippocrates of Kos (c. 460 - c. 370 BC), Ancient Greek physician considered to be the father of medicine.

⁸ “While I wish to be adorned with every virtue, yet there is nothing which I can esteem more highly than being and appearing grateful. For this one virtue is not only the greatest, but also the mother of all the other virtues”. Source: Pro Plancio. Rome, 54 BC. Marcus Tullius Cicero (106 BC – 43 BC).

⁹ “Not that which is great is noble, but that which is noble is great.”

¹⁰ “Farewell Giovanni, I hope that the memory of our friendship will be everlasting.” (modified from Marcus Tullius Cicero (106 BC – 43 BC)).